What is claimed is:

1. A projection objective comprising:

a first lens group of positive refractive power;

a second lens group of negative refractive power;

at least one additional lens group having positive refractive power and said one additional lens group having a diaphragm mounted therein;

said first lens group including only lenses having positive refractive power;

said one additional lens group having a number of lenses of positive refractive power arranged forward of said diaphragm; and,

the number of lenses of positive refractive power of said first lens group being less than the number of lenses of positive refractive power of said one additional lens group arranged forward of said diaphragm.

2. The projection objective of claim 1, wherein at least one of the lenses of said first lens group is an aspheric lens.

3. The projection objective of claim 1, wherein said first lens group has at least two positive lenses.

4. The projection objective of claim 1, wherein all of the lenses of said first lens group are biconvex lenses.

5. The projection objective of claim 2, wherein said first lens group has an aspheric lens having an asphericity; and, said asphericity deviates by more than 200 μm compared to the best

fitting spherical lens surface.

6. The projection objective of claim 1, wherein the objective has a numerical aperture of at least 0.8.

7. The projection objective of claim 1, wherein the objective has a numerical aperture of at least 0.9.

8. The projection objective of claim 1, wherein all of the lenses of said first lens group and all of the lenses of said second lens group except for the least one lens thereof all have almost identical diameters.

9. The projection objective of claim 1, wherein the diameters of at least the first nine lens surfaces are almost the same size.

10. The projection objective of claim 1, wherein the diameters of at least the first nine lens surfaces are less than a multiple of 1.3.

11. The projection objective of claim 1, wherein the approximately equal diameters (D1) of the lenses arranged at the object end are approximately half as large as the maximum diameters (D2) of the following lenses.

12. A projection exposure system for microlithography, the system comprising:

a light source for providing radioactive needed for a projection exposure;

a projection objective mounted downstream of said light

source; and,

said projection objective including:

a first lens group of positive refractive power and said first lens group having a number of lenses of positive refractive power;

a second lens group of negative refractive power;

at least one additional lens group having positive refractive power and said one additional lens group having a diaphragm mounted therein;

said first lens group including only lenses having positive refractive power;

said one additional lens group having a number of lenses of positive refractive power arranged forward of said diaphragm; and,

the number of lenses of positive refractive power of said first lens group being less than the number of lenses of positive refractive power of said one additional lens group arranged forward of said diaphragm.

13. The projection objective of claim 12, wherein said light source is an excimer laser and said radiation having a wavelength of less than 25 nm.

14. A method for making a microstructured component utilizing a projection exposure system including a light source for emitting ultraviolet laser light; and, a projection objective defining an optical axis and mounted downstream of said light source; said projection objective including: a first lens group of positive refractive power and said first lens group having a number of lenses of positive refractive power; a second lens group of

negative refractive power; at least one additional lens group having positive refractive power and said one additional lens group having a diaphragm mounted therein; said first lens group including only lenses having positive refractive power; said one additional lens group having a number of lenses of positive refractive power arranged forward of said diaphragm; and, the number of lenses of positive refractive power of said first lens group being less than the number of lenses of positive refractive power of said one additional lens group arranged forward of said diaphragm; and, the method comprising the steps of:

introducing a mask containing a pattern between said light source and said projection objective on said optical axis;

placing a substrate having a light-sensitive layer on said optical axis downstream of said projection objective;

exposing said layer with said laser light through said mask; and,

developing said light-sensitive layer and structuring said substrate in correspondence to said pattern of said mask.